

REMARKS

Summary of the Office Action

The drawings stand objected to under 37 C.F.R. § 1.83(a).

Claim 1 is objected to for alleged informalities.

Claims 1, 2, 5 and 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nagai et al. (U.S. Patent No. 5,434,901) in view of Chase and Silk (Applied Optics Vol. 14, No. 9, 1975) (hereinafter "Chase and Silk").

Claim 3, while objected to as being dependent upon a rejected base claim, would be allowable if rewritten in independent form.

Summary of the Response to the Office Action

Applicants have amended independent claim 1 to differently describe embodiments of the disclosure of the instant application. Applicants have canceled claim 6 without prejudice or disclaimer. Accordingly, claims 1-3 and 5 remain currently pending for consideration.

Objection to the Drawings

The drawings stand objected to under 37 C.F.R. § 1.83(a). Applicants have canceled claim 6 without prejudice or disclaimer, rendering this drawing objection moot. Accordingly, Applicants respectfully request that the drawing objection be withdrawn.

Claim Objection

Claim 1 stands objected to for alleged informalities. Claim 1 has been amended in response to the Examiner's comments at page 3, section 2 of the Office Action. Accordingly, withdrawal of the objection to claim 1 is respectfully requested.

Rejection under 35 U.S.C. § 103(a)

Claims 1, 2, 5 and 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nagai in view of Chase and Silk. Applicants have amended independent claim 1 to differently, describe embodiments of the disclosure of the instant application. To the extent that these rejections might be deemed to still apply to the claims as newly-amended, they are respectfully traversed for at least the following reasons.

As described in the previously-filed responses in this application, Applicants respectfully submit that embodiments of the disclosure of the instant application, as described in the claims, utilize a Wolter optical system in a novel way that enables an adjustable magnification. In a Wolter optical system, the distances "a" and "b," as illustrated in Fig. 1 of the instant application, have conventionally been understood being required to remain fixed because of the performance of a grazing incidence mirror, thereby requiring the magnification to remain fixed as well. However, Applicants respectfully submit that the inventor of the instant application's disclosure discovered by ray tracing simulation that the image can still be formed even if these distances "a" and "b" are adjusted at the sacrifice of the associated resolution within an allowable degree as illustrated in Fig. 2 of the instant application.

Applicants respectfully submitted in the previously-filed responses that although the applied Nagai reference discloses the use of a Wolter optical system, it does not disclose, or even

suggest, magnification adjustment of such a system, to any extent. The Office Action concedes at page 4, for example, that this is the case.

However, the Office Action then alleges that Chase and Silk cures these deficiencies because it “discloses that the magnification of a Wolter mirror is determined by the ratio of its image distance and object distance (P2097, Column 1, last paragraph).” Applicants respectfully traverse this combination as not meeting the novel combination of features of independent claim 1 of the instant application for at least the following reasons.

Applicants respectfully submit that Chase and Silk does not disclose, nor even suggest, any technical idea of performing magnification changing by a variable control of a distance between a sample and an objective lens and a distance between the objective lens and a detector, as specifically described in the combination of features of independent claim 1 of the instant application.

Even further, Applicants respectfully submit that Chase and Silk discloses a twelve Wolter mirror system in which various magnifications, object distances and grazing angles are studied and it shows that one typical system thereof has the object/image distances of 20/100 cm from the mid plane for a magnification of 5.

In other words, Applicants respectfully submit that Chase and Silk discloses that in order to obtain a desired magnification, (a magnification of 5), a typical mirror system with the object/image distances of 20/100 cm from the mid plane is designed. However, Applicants respectfully submit that Chase and Silk does not disclose, nor even suggest, that in a mirror system having a different design value, for example a magnification of 10, in order to obtain a mirror system with a magnification of 5, the object/image distance is adjusted. That is,

Applicants respectfully submit that Chase and Silk does not disclose, nor even suggest, that in order to obtain a mirror system with various magnifications by using a single mirror, the object/image distance is adjusted.

As previously discussed, Applicants respectfully submit that a Wolter mirror generally and conventionally are utilized with a fixed magnification. In order to change the magnification thereof, Applicants respectfully submit that it is necessary to use only a very specific mirror. Applicants respectfully submit that the novel combination of features described in independent claim 1 of the instant application, for example, makes it possible utilizing only one mirror to observe a sample at various magnifications in a way that has not been achieved in conventional arrangements.

Accordingly, Applicants respectfully submit that newly-amended claim 1 of the instant application clearly describes a combination of features that differ from the applied art of record for at least the foregoing reasons. Furthermore, Applicants respectfully assert that dependent claims 2 and 5-6 are allowable at least because of their dependence from claim 1 and the reasons set forth above.

The Examiner is thanked for the indication that claim 3, while objected to as being dependent on a rejected base claim, would be allowable if rewritten in independent form. Applicants respectfully submit that claim 3 is also allowable at least because of its dependence from independent claim 1. Accordingly, withdrawal of the objection to independent claim 3 is respectfully requested.

CONCLUSION

In view of the foregoing amendments and remarks, withdrawal of the rejections and allowance of all pending claims are earnestly solicited. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicants' undersigned representative to expedite prosecution. A favorable action is awaited.


EXCEPT for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. § 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0573. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,

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